

In the Claims:

Please amend claims 1-16 as follows:

1. (currently amended) A method of rapidly welding rebar sections using gas metal arc welding (GMAW) to obtain a fusion weld joint, comprising:

shearing the rebar sections into lengths appropriate for a construction application;
bending the sheared rebar into shapes appropriate for the construction application;
placing the rebar sections into a welding jig;
positioning the rebar sections to physically touch and intersect at a desired location;
adjusting an electrical power source of the welder within a range of approximately
100 to 185 kilowatts;
positioning a welding rod at a rebar intersection point;
positioning a filler material at the weld location;
delivering a shielding gas to the weld location;
applying electrical power to a welding electrode wire using an electrical power
delivery system; and
arcing said electrode wire at the intersection point to form a fusion weld joint having
a flare bevel groove.

2. (original) The method of claim 1, wherein the rebar is grade A706 steel.
3. (original) The method of claim 1, wherein the filler material is grade ER80S-D2.
4. (original) The method of claim 3, wherein the filler material comprises:
grade LA90; and,
grade Murematic D2.
5. (original) The method of claim 1, wherein the shielding gas comprises:
about 90% argon; and,
about 10% carbon dioxide.

6. (original) The method of claim 1, wherein the flow rate of the shielding gas is about 35 cubic feet per hour.

7. (canceled).

8. (currently amended) The method of claim 1, wherein the electrode wire is selected from the group consisting of:

a solid electrode wire of about 0.045 inches diameter single shield; and

a flux core electrode wire of about 0.045 inches diameter single shield.

9. (original) The method of claim 8, wherein the electrode wire feed rate is about 350 inches per minute.

10. (original) The method of claim 1, wherein the electrical power is applied to the wire at about 0.02 seconds spot time.

11. (original) The method of claim 1, wherein the combined weld time is about 2 – 3 seconds.

12. (original) The method of claim 1, wherein the dimension of the fusion weld is about 1/4 — 5/8 inches.

13. (original) The method of claim 1, wherein the fusion weld joint comprises:

a butt joint;

an overlap joint; and

a cross joint.

14. (currently amended) A system for producing GMAW fusion welded rebar panels using rebar, comprising:

an assembly system having:

a rebar shear used to cut the rebar into lengths appropriate for a construction application;

a rebar bender used to impart curvature to the rebar appropriate for a construction application;

a welding jig used to align the rebar in the desired rebar panel configuration;
at least one rolling table facilitating the movement of the rebar;
a gas metal arc welding unit; and
an electrical power generator delivery system capable of delivering electrical power
to the gas metal arc welding unit,
wherein the welded rebar panels made by the assembly system comprises at least one
fusion weld joint having a flare bevel groove.

15. (original) The system of claim 14, wherein the assembly system is stationary.
16. (original) The system of claim 14, wherein the assembly system is portable.